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ABSTRACT

This booklet attempts to explain distance education in a short and readily understandable way. It tells what distance education is as well as what it is not. Users of distance education are described. Other topics include the basic system and subsystems of distance education; ways of communicating; what makes distance education materials good; distance education material design, production, and distribution; services needed to back up distance education materials; student assessment; how to run an efficient system; and how to start a distance education system. The booklet also focuses on choosing an organizational model, special problems of managing a distance education system, costs of distance education, and how distance education works. Sources of additional information and a selected bibliography are also provided. (YLB)

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Walter Perry and Greville Rumble

A Short Guide to Distance Education

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Walter Perry and Greville Rumble

A Short Guide to Distance Education

International Extension College

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FOREWORD

Distance education began following the development of cheap postal services. That was the first economic medium of communication between two people who did not meet face-to-face. There have been correspondence schools and colleges for many years. Since then, other means of communication have been adopted by distance educators – first radio (in the 1940s), then television (in the 1950s and 1960s), followed by audio and video cassettes and computers in the 1970s and 1980s. In the 1970s and 1980s distance education spread rapidly to most countries of the world.

In spite of this, there is widespread ignorance of what distance education really is. The large and increasing literature is mostly couched in a new jargon that is comprehensible only to those who have worked in distance education. Many academics remain sceptical about the whole thing.

We think that the whole subject is very simple and felt that it was time that someone explained this new and revitalising educational system in a short and readily understandable way. This little book is the result.

Walter Perry
Greville Rumble

CONTENTS

Chapter		Page
1	What is distance education?	1
2	Things distance education is not	2
3	Who uses distance education?	4
4	The basic system of distance education	5
5	Ways of communicating	8
6	What makes good distance education materials?	9
7	How to design distance education materials	11
8	How to produce distance education materials	13
9	How to distribute distance education materials	14
10	Services needed to back up distance education materials	15
11	How to tell whether students have been educated	16
12	What is necessary to run an efficient system?	18
13	How to start a distance education system	20
14	Which organisational model to choose	22
15	The special problems of managing a distance education system	23
16	The costs of distance education	25
17	Does distance education work?	28
18	Finding out more about distance education	30
Selected bibliography		31

CHAPTER 1

What is distance education?

What is education?

For education to occur, there must be someone who needs educating and someone to do the educating. This implies that there is both a learner and a teacher, and some form of two-way communication between them. The teacher must have something he or she wishes to tell the learner, the learner must make some response to the teacher, and the teacher must then provide some 'feedback' to the learner on what the latter has said or written.

The learner, in order to be educated, must acquire three things:

- knowledge
- skills
- understanding.

Learners must know something (knowledge), they must know how to use that knowledge (skill) and they must know why they are using it and what its value is in the widest possible context (understanding).

What is distance education?

In the context of education, distance means that the learner and the teacher are not face-to-face. Thus two-way communication must take place despite the fact that they are not in the same room together.

Two-way communication can be established using any medium that is available. Examples are:

- postal or electronic mail
- telephone or telex
- two-way radio
- modems allowing the linkage of computers and TV screens by telephone
- interactive video discs controlled by computer. (In this case the teacher is replaced by the computer which is programmed to provide the answers to all the questions that the learner could possibly put. Of course, there is always a question which the programmer has not thought of.)

CHAPTER 2

Things distance education is not

It is important to realise that distance education is a specific term. It means only the system described in Chapter 1; and it is *not* anything else.

First, since it depends on two-way communication, distance education is not either:

- just teaching people who are at a distance from one, or
- just learning from the work of someone who is not present.

The simple acts of drafting instructions, writing an article or 'Teach yourself' book, and developing a 'programmed learning text' can be described as teaching people who are at a distance from one; and the equally simple act of reading them as learning at a distance from their author. But this is not education as we have defined it. Distance education requires both distance teaching and distance learning, as well as two-way communication between teacher and learner. For this reason we exclude things such as 'programmed learning texts' and 'Teach yourself' books from our definition of distance education. Similarly, on their own, educational broadcasts are not a form of distance education. However, any of these may be a part of a distance education system if they are linked with some kind of two-way communication.

Can anyone be self-educated? Can one become an educated person solely by reading in a library? We think the answer must be 'yes' but only for a very few extremely gifted people. For most, the intervention of a teacher is essential.

Second, there are many terms that have come to be used to describe forms of education that, in some way or another, depart from established norms. Some of the more common ones are:

- open learning
- non-traditional education
- external study
- extension study
- contract learning
- experiential learning.

None of these should be used to describe distance education. Any one of the first four could, however, be regarded as a generic term that includes the specific term 'distance education', but includes much else that is not. The main reason why it is important to be careful in this respect is that learning materials that are to be used by a teacher in a face-to-face situation with a learner do not have to be of the same nature as the materials that must be used for successful distance education. Inferior materials improperly used could bring distance education into disrepute. On the other hand, materials suitable for distance education can always be used in the face-to-face situation.

We therefore exclude from our definition of distance education the activities of those schools and colleges which make use of 'educational technologies' such as radio, television, audio and video cassettes, and computer programs, to support learning in the classroom. Equally, we exclude those schools and colleges which make use of distance learning materials of any kind as an alternative to some of the classroom teaching.

CHAPTER 3

Who uses distance education?

Distance education is used at all educational levels – primary, secondary and tertiary – as well as in the non-formal sector of education.

Distance eduction is not widely used at primary level to teach young children, because they need close contact with a teacher to help them learn, but it is used to teach primary level education to adults. The radio schools of Latin America are good examples of primary level adult education at a distance.

Distance education has been widely used at the secondary level. Examples of 'schools' teaching secondary level courses at a distance include Hermods-NKI Skolen in Sweden, Radio ECCA in the Canary Islands, the Air Correspondence High School in South Korea, the Schools of the Air in Australia, the Telesecundaria in Mexico, and the National Extension College in the United Kingdom.

Distance education has also been used at the higher education level, initially by universities which also teach students face-to-face – such as the University of Wisconsin in the United States, and the University of New England, the University of Queensland and Deakin University in Australia. More recently universities and other higher education institutions have been set up specifically to teach at a distance. Examples of the latter include the Open University in the United Kingdom, the FernUniversität in West Germany, the Indira Gandhi National Open University in India, and the Universidad Estatal a Distancia in Costa Rica.

Distance education has also been used to train teachers – particularly teachers who are already in post and whose level of previous training is insufficient. Countries where this has been done include Nigeria, Tanzania and Mexico.

Finally, distance education has been used in a large number of non-formal adult education programmes – particularly in health, agriculture and social welfare. Examples have included the radio campaigns in Tanzania and Botswana, the radio clubs in Niger and the radio farm forums in India.

Some of the books we refer to in the bibliography to this book contain information about the experiences of these and other institutions.

Correspondence education based on cheap postal services, printed materials and handwritten two-way communication between teacher and learner was initially developed by private enterprise. This commercial approach to distance education continues to this day. However, correspondence and distance education is now a recognised part of many national education services, with institutions teaching at a distance receiving support from public funds.

Obviously the nature of the target audience and the level at which one is teaching have implications for the design of materials and the level of student support services provided. This must be borne in mind in designing the system.

CHAPTER 4

The basic system of distance education

To establish a system of distance education it is necessary to provide five subsystems and to knit them together. These subsystems are:

- design of materials
- production of materials
- distribution of materials and of teaching and support services
- assessment of learners
- system management and maintenance of records of the learners.

Design of materials

Distance learners have to learn from materials prepared by teachers, rather than directly from a teacher in a classroom. These materials have to be designed by the teachers. We discuss this process more fully in Chapter 7. There are a number of different ways of communicating with students at a distance. We discuss the question of choice of media in Chapter 5.

Distance learners rely on themselves to continue studying. They may have no means of asking for help. The learning materials that they use must therefore be wholly free from errors of fact and wholly unambiguous. They must also be written in a style that is appropriate for adults, since almost all distance learners are adult.

Writing in this way is difficult; and many academics are practised only in writing for their peers. Making a text simple, clear and free from jargon is a new exercise for them. We will explore ways of doing this in Chapter 6.

The material in texts must be structured in such a way as to call for a response from the learner at regular intervals. This serves as a means of self-assessment and of convincing the learner that he or she really has understood the text.

The materials must also meet the learners' needs and be designed in a way which will take account of the existing skills, knowledge and understanding of those at whom they are aimed. Faced by materials which do not meet their needs, students will simply cease studying. Faced by materials which are beyond their capabilities, they will simply give up.

Production of materials

The materials designed by the teachers have to be produced in a form suitable for use by students. Sufficient copies have to be made available to meet the needs of all the students likely to want to study from them. We discuss the production process in Chapter 8.

Distance learners will readily 'drop out' of the system unless their interest can be held. One sure way of inducing a loss of interest is to present the learning materials,

however good the content, in an unattractive way. Single spaced typing badly reproduced on both sides of poor quality paper guarantees failure. Good quality paper and print, wide margins and colour pictures all help to keep learners going.

Media must be used properly. The use of television and radio must be confined to things that call for a video or audio signal. Television should almost never show a talking head; and when it does, it should be the head of a recognised expert.

Distribution of materials and of teaching and support services

Distribution means getting the materials to the learners. Usually this means the despatch of materials by post; it may include open circuit or cable or satellite transmission of radio or television programmes. We discuss this in Chapter 9.

Arrangements should also be made to provide a local support service for learners. This is an absolutely vital element of all known successful distance education systems. Learners must be put in touch with teachers by one or more of a variety of methods so that the necessary two-way communication can take place. Safeguards and monitoring techniques must be built in to ensure that this happens. Chapter 10 deals with this aspect of the system.

Special arrangement may have to be made in certain cases for such additional services as:

- access to laboratories or workshops
- residential schools
- home experiment kits
- special care for the disabled
- special communication with and support for learners living in remote areas.

Assessment of learners

Like any other educational system, the final criterion by which distance education is judged is the quality of its product – whether graduates, or diplomates, or just better educated people. A subsystem for the assessment of learners is needed both on a continuing basis throughout their studies and as a final check on achievement.

The absolute requirements of the assessment system (which we discuss more fully in Chapter 11) are:

- that it is seen to be fair. This means monitoring the performance of teachers.
- that it makes no compromise on standards. A second-rate qualification is of no value and may be a handicap. This usually means subjecting the final examination to external monitoring or accreditation.
- that the continuous assessments are made part of the process of education – in that they themselves act as a feedback to the learner. It is well recognised that there can be a conflict between the use of assessment as a means of checking on students' achievements (final assessment) and its use as a means of providing feedback on their performance to date (continuous assessment).

For distance learners, it is necessary to ensure that there is a regular sense of achievement. This calls for the use of small 'modules' of learning material and, where appropriate, the obtaining of a qualification by the gradual accumulation of credits obtained in individual modules or groups of modules.

System management and the maintenance of records of learners

This subsystem holds together all the others. There are no hard and fast rules as to the way the subsystem should be organised provided that it is efficient. Many of the tasks it carries out are common to any institution – recruiting staff, accounting for expenditure, maintaining buildings in good repair. We do not discuss these tasks at all. However, distance education does raise some particular problems for an educational institution, and in Chapter 12 we discuss certain practices which we feel to be important in the administration of distance education.

CHAPTER 5

Ways of communicating

There are many ways through which teachers can communicate with students at a distance. In the usual jargon we say 'You can choose from a range of media of communication'; and the range goes on increasing. Some ways are limited to one direction – e.g. teacher to pupil (like television), while others are two-way systems (like the telephone). Both are useful. In general it makes sense to use a combination of media, because different media have different strengths, and because the different ways a message is presented can reinforce a student's learning.

Students can learn from any medium. In Chapter 6 we give examples of how media can be used effectively.

The choice of medium for each module (small unit) of teaching material should depend primarily on a decision about which one will best convey to the student the message that you want to get across. Sometimes it is an easy choice. If, for instance, you want to show your student exactly how an expert fly fisherman casts a line, you will have to use a moving picture, television or video cassette. But often the choice, based only on pedagogic criteria, is extremely difficult.

In such circumstances all sorts of other criteria become important to the choice of medium. Some of these are:

- the facilities available to you. It is no use choosing to use radio as a medium if you have no access to production and broadcasting facilities.
- the money available to you. The production of a video programme costs about seven times as much as the production of a radio programme. Unless the moving picture is *essential to understanding*, you can save money simply by not using it. You don't need to see an orchestra to listen to music.
- whether the students can receive the signal. It is pointless to offer video discs to an audience of villages with no electricity supply; or, indeed, to broadcast television at 3 a.m. to people without a video recorder.
- whether the students can afford to receive the signal. This involves two things: first, whether the production costs are so high that fees become prohibitive and, second, whether the cost of the equipment they have to provide for themselves (television sets, video recorders etc.) is more than they can afford.
- the number of students likely to take the course. It is not sensible to use media with high fixed costs such as television and computer-aided instruction on courses which are likely to have very small numbers of students.

Remember that poor quality materials in any medium not only will not help the student; they will also rapidly bring the medium into disrepute and, in time, risk making people conclude that distance education cannot work.

So use only media you can afford and that you can use well; and remember that it is better to offer one good course than any number of bad ones.

CHAPTER 6

What makes good distance education materials?

Students studying at a distance cannot raise their hands and ask their teacher to explain something they haven't understood. Distance teachers have a responsibility for ensuring that the materials do not leave students floundering. They can help if they:

- tell the students clearly what is expected of them
- make use of contents lists and explanatory titles etc. which help students identify precisely where they are and why they are studying the materials
- have introductions and conclusions
- do not write above students' heads. (This means that the people preparing the materials need to have a good idea about what kind of level of knowledge, understanding and skill their students will bring to the course.)
- make sure that students can easily get hold of all the information they need to study successfully. Do not, for example, recommend books which students will be unable easily to buy or borrow from a library.
- arrange the materials so that ideas and concepts lead naturally into each other
- provide clear examples which will help the students' understanding
- check and recheck the draft materials for errors of fact, lack of clarity, poor logic, grammatical errors, etc.

All too often, reading a text, watching a video, or listening to a cassette can become a passive occupation demanding far too little of the students. Passive students become bored and do not learn very well. Those preparing the materials can help:

- by preparing the materials in 'chunks' which will occupy the student for no more than one hour at a time. One hour is the longest reasonable time to expect students to settle down and concentrate on their studies.
- by asking the student to do something. For example, one can ask a student to stop reading, think about what he or she has been doing, and then write an answer to a 'self-assessment question' written into the text. The text can then give a model answer, and discuss why the answer given is a better one than some of the alternatives which students could have given. Do not, however, be surprised if some students ignore these self-assessment questions.
- by varying the things students do – for example, by getting them to read a passage from a text, carry out an experiment, listen to an audio cassette, and then answer a self-assessment question, before going on with the reading. Do not be surprised if students study the materials in a different order from the one you have suggested.
- by varying the way in which material is presented through the use in texts of illustrations, cartoons, diagrams; varying the voice or style of delivery in audio cassettes, etc.

- by avoiding a dreary or boring style
- by making the materials easy to read and nice to look at, a pleasure to listen to, good to watch, etc., thus making it a pleasure to learn.

It helps if teachers:

- write or speak simply or plainly
- do not overload paragraphs
- use short sentences
- avoid unnecessary jargon
- express themselves positively by using strong, active verbs
- use 'I' and 'you' in a 'personalised' style (e.g. 'Now I want you to read pages 17 to 25 of . . .')
- are humorous
- get rid of anything that sounds pompous, long-winded or jargon-ridden.

Teachers can be helped to produce good material:

- by arranging for the draft materials to be checked by other people, including other teachers. These can be members of a team preparing the materials, or teachers appointed specifically to assess the materials and criticise them.
- by arranging for an instructional designer or educational technologist to look at the draft materials and transform them into good teaching materials
- by ensuring that drafts are checked by an editor
- by getting individuals to go through the materials as if they were students
- by arranging for a limited number of students to study the materials, using their comments and results as 'feedback' which is then taken on board in an early revision of the materials ('piloting' the materials).

Finally, students find it easier to use well produced materials. You should avoid such things as:

- fuzzy copies taken from waxed stencil 'masters'
- poor photocopies
- printed pages with small type, too many characters per line, and too many lines per page
- unclear diagrams, photographs, and graphs
- poor audio reproduction.

CHAPTER 7

How to design distance education materials

There are two important steps to be taken before you begin designing a course. One is to find out what your potential students need to learn. The other is to decide what it is that you want them to learn. This sounds self-evident but they are actually steps that are usually missed out by teachers in every kind of educational establishment. It is quite difficult to do this well. For one thing, what the students want to learn and what you want them to learn are not necessarily the same thing. Also, while in some institutions teachers can decide both the content of a course and the nature of the examination, in others the teachers' prime purpose is to prepare students for an examination which will be set by some other body. So the teachers' freedom to decide what shall be taught may be restricted, and the priority given to students' needs as against teachers' views may differ, depending on circumstances.

Generally, the more the aim is to prepare students for a particular public or professional examination, the less freedom the teacher will have to decide what should be taught – unless of course the teacher is also charged with setting the examination – and the less important will be the views of the student as to what it is relevant to learn. Conversely, in non-formal systems, while the teacher may have ideas about what should be taught, the most important consideration should be the students' needs.

The design process thus starts with an idea – for instance, that in response to a need, you should design a programme to train computer programmers by distance education.

Now it may be that you are aware that someone else – in another institution, perhaps in another country – has already had that idea and has produced materials that have worked well. And even if you are not aware of this, there are ways of finding out (see Chapter 18). You should certainly start by looking at any existing materials to see whether they will suit you; because this could save you a lot of money and enable you to get on and do something else. When you look at the materials you should be asking yourself:

- whether they are suitable for use in your country
- whether your potential students will be able to understand them
- whether you can distribute them
- whether there are any insuperable 'technical' problems – e.g. cost, copyright, availability of publications etc. – making it difficult for you to use them.

Even if there are no obvious problems you may find your staff is unwilling to use materials designed by other academics. We call this reluctance the 'Not invented here' syndrome – NIH for short.

If you cannot acquire pre-existing materials you will have to design your own from scratch. You must first write down clearly and succinctly exactly what you expect the student to be able to do once he or she has mastered the materials you provide. This will yield a set of objectives. Once you know what the objectives are it should be much easier to design the materials that will enable the learner to attain them. There are two different ways of setting about this and both have been made to work. You can commission expert authors to write the materials you need. Most experts write, however, for other experts to read. So you will have to employ your own staff of people who can rewrite their drafts in a style that will be suitable for adult students studying at a distance. These people are hard to find. They may be called *educational technologists* or *editors*. Whatever they are called they are essentially *transformers*. If you can find good transformers this will be the cheapest way to design materials. Often, however, the transformers are not all that good and the standard of the materials suffers as a result.

The other way is to set up a 'team' consisting of the academic experts, transformers, teachers from related fields (when this seems desirable), graphic designers, television or radio producers where necessary, and an editor. The team approach works best when all the members of the team are employees of the same distance education institution. Not only does that ensure their primary loyalty; it also makes the holding of meetings of the team easy instead of extremely difficult. The main problems with this team approach are: first, that it is expensive; second, it can take a long time to develop the course; and third, it can be stressful, so that the leader must have managerial and human relations skills as well as high academic quality. On the other hand team work does produce very high quality materials.

The design process – whichever approach is used – must include the choice of the media to be used (see Chapter 5) for each module.

Whatever method of design is used, materials can and should be independently assessed to ensure that they are of a proper quality. This can be done by appointing external assessors or by pre-testing of the materials by a group of volunteers.

CHAPTER 8

How to produce distance education materials

Once the learning materials have been designed they have to be produced in a form suitable for distribution. This means, for example, printing copies of the text, producing television or radio programmes in the studio, or making multiple copies of video or audio cassettes for postal distribution. Such production may take place 'in house' or be contracted out. In either case it takes time.

Project control

It is crucial that all materials reach students at the right time. By now you will appreciate that there are all sorts of hazards in the way of ensuring that this happens. These range from failure of the 'team' to produce its design on time to failure of any part of the production process to operate on time. One vital feature of a successful system is a powerful project control office that prepares the development, production and distribution schedules, monitors progress, and signals any potential failure.

'In house' production

'In house' facilities are easier to control but are expensive to set up and to run. They must be used to full capacity in order to compete economically with external contractors. Furthermore, once such facilities are established 'in house' the institution is virtually committed to using them, and this can impose inflexibility in the choice of media that can be used. It is, therefore, wise to rely on external contractors until it is absolutely certain that a facility is needed on a long-term basis and can be fully utilised. Of course, if the external contractors do not do the job properly or cheaply enough, then you will have no alternative but to do it 'in house'.

Stock control

Materials, once produced, are used up as they are given to students, lost, or wear out. It is possible to order quantities large enough to last for several years. This has benefits in that a long production run gives much cheaper unit costs than a short one. On the other hand large stocks mean that alterations are much more difficult and costly to make, however necessary they may be. Good anticipation of demand and of probable alterations can make very large differences to the overall cost.

Stocks have to be stored. The benefits gained from the lower unit costs of long production runs have to be set against the cost of warehousing.

CHAPTER 9

How to distribute distance education materials

The most important thing is to get the material to the point of use in time for the student to use it. Students must know:

- exactly what they will next receive
- when they will receive it
- where they will receive it
- how to go and get it – if this is necessary.

Students must also be able to work out when something has *not* arrived, so that they can ask for it to be sent to them. There must be ways in which missing materials can be dealt with quickly.

The method of delivery needs to be efficient, reliable and cheap. Different delivery methods have different costs, depending on student numbers and other factors. The systems chosen should always be those already available. If there is no efficient postal service available the materials must be distributed by other means. If there is no television station available, video cassettes can be used, but only if video recorders are available either in homes or at local centres.

Distribution can be direct to the students' homes or indirect to a local centre where the students can use the material or from where they may collect it. It is important that students should be able to get to the centres easily and that the centres are open at times convenient to them. If the materials are going to be used in the centres, then there have to be enough sets of material and equipment and adequate facilities to give students a reasonable chance of using them without queuing for long periods.

Delivery to the home presupposes the existence of a reliable postal or courier service. Students who for whatever reason cannot receive certain services such as broadcast transmissions at home should be able to go to a local centre to use a back-up service. The back-up may be provided in a different form from the original distribution – for example, a library of video cassettes of the broadcast television programmes, for students who do not have a television set at home. We think that 'home-based' distribution is best because, from the students' point of view, it is much more flexible.

Wherever possible materials should be distributed well before the student needs them. Sometimes students have to use a medium at a specific time – for example, in the case of telephone conferences or live broadcasts which are coupled with student phone-ins; these times must be convenient for most students or the transmissions are pointless. Finally, students must be told these times well in advance, so that they can plan their own timetables.

CHAPTER 10

Services needed to back up distance education materials

A vital factor, also seen as part of the distribution subsystem, is a local back-up service to supplement the learning materials. Local centres are a part of this back-up. They are places where a distance learner can meet other distance learners. From such meetings students may suddenly come to realise that other people are having the same sorts of difficulties in understanding as they are, and that actually they are not as stupid as they thought, but rather that the concepts are difficult. Of course, students may drop out for any number of reasons, but the realisation that others are facing the same problems can be essential to having the determination to continue studying instead of dropping out.

Local centres also offer the chance of meeting a tutor face-to-face. It is, of course, a denial of 'pure distance education' that there should be any face-to-face contact. But most successful systems have found that face-to-face meetings are advisable at least as a remedial measure. Students who get totally stuck and cannot get unstuck even by talking to other students must have help if they are to continue studying. They can get it by telephone but it may be simpler for them to meet a tutor. Tutors in all subjects cannot be available at all local centres all the time. So the student who is stuck may have to wait for several weeks for such a meeting. Try to arrange that the delay is shortest for studies in subjects which, like mathematics, are highly sequential. In other subjects like history or literature delay is much less serious.

Other two-way back-up services are, of course, vital to the success of distance education. Written work by the learner must be sent to the tutor for marking and then returned with helpful comments. There must be someone to advise the learners where and how to get additional materials such as library books, and to help them plan their future studies. There may also have to be specialised back-up services like residential schools, weekend schools, or kits for doing experiments at home for those learning science or technology.

Back-up of the kind described is, by popular consent, quite essential to success. It must be offered with care, kindness, and efficiency if students are not going to drop out in large numbers.

CHAPTER 11

How to tell whether students have been educated

As we saw in Chapter 7, the materials are designed to help students achieve a definite set of objectives. These will have been chosen in many instances in such a way as to ensure that those who attain them will be fitted for a particular kind of employment.

There is therefore a need to be able to say at the end of the learning period whether or not a particular student has attained the objectives. It is necessary both for the students and for the potential employer. The evaluation of an individual for the purposes of accreditation (the award of a credit) can be done in a variety of ways:

- it can be continuous during the course or it can be a final examination
- it can be controlled (invigilated) or uncontrolled
- it can be by objective test (multiple-choice questions) or by open-ended essay type questions
- it can be written, practical or oral.

Often a combination of some or all of these methods will be used. In such cases a standard way of combining the results into a single decision, whether or not to award a credit, must be determined by assigning a weight to each separate part of the evaluation.

Where tests have to be taken at regular intervals (continuous assessment), they offer a valuable means of pacing the student's work. This is often a problem for a distance learner working alone. Furthermore, as mentioned in Chapter 10, the tutor marking the tests provides helpful comments so that it is not just an evaluation, it is also a part of the educational process. Continuous assessment can usually be done efficiently only if it is unsupervised. Moreover, as part of the educational process, it seems only right that students should have the chance to think about the questions and research their answers. This means allowing students to complete the assessments in their own time (subject usually to a final date for delivering their work to the marker). Continuous assessment is therefore open to cheating. So it is usually necessary to have some element of the assessment that is supervised. This is most often arranged for the final examination. Having some form of supervised final assessment is usually thought to be necessary if the credits awarded by the institution are to be regarded as credible by employers and others.

Many institutions teaching at a distance are preparing students to take examinations set by other institutions or by examining bodies. Obviously, how the examination is conducted is not their responsibility, and they can only do their best for the students by preparing them adequately for the examinations.

Some institutions which teach at a distance are also examining bodies in their own right. In this case, tests are best set by those who designed the materials. It is also better if the answers are marked by those who designed the course. However, this

is impossible if there are very large numbers of students. If many people are involved in assessing the students' work, then it is necessary to:

- provide all markers with a marking scheme to guide them
- sample the marks awarded by different examiners
- monitor the grades awarded and adjust any aberrant markers
- appoint external examiners to ensure that overall standards are maintained.

The quality of the assessment process is very important if credibility is to be maintained. It is more difficult publicly to defend credibility in distance education than in conventional education. Once credibility has been lost it is very difficult to regain.

CHAPTER 12

What is necessary to run an efficient system?

All institutions have to appoint staff, pay them, set budgets, account for their expenditure, purchase supplies, maintain buildings and equipment, organise internal mail services, etc. Distance teaching institutions are no exception. Many of these tasks are done by specialised departments or offices – personnel, finance, buildings and estates, etc. Other administrative offices will be responsible for supporting the various decision making bodies which most educational bodies have – by for example minuting meetings and ensuring that decisions are acted upon.

In this short book we are not concerned with those aspects of administration and management which are not special to distance education. There are, however, certain things which we wish to stress.

First, planning. It can take a long time to develop and produce a course – up to three years in some institutions. The number of staff required to develop the materials which make up the courses, the staffing levels and capacity of the production and distribution subsystems, the level of support facilities, and the budgets needed for all these, will need to be estimated in the light of decisions about the use of media and the volume of materials to be developed, produced and distributed, the number of courses on offer, and the number of students who will be enrolled on each course. The various administrative 'overheads' which are not directly related to courses and students but are affected by the general size and complexity of the institution – such as personnel, finance, etc. – will need to be large enough to support the levels of activity. Buildings and accommodation will also have to be provided. It is the task of planning to see that the various connections between volumes of activity, staffing, resource and accommodation needs are understood and plans are adjusted if resources are likely to prove inadequate.

Second, the fact that it can take so long to develop and produce a course means that long-term 'strategic' planning – particularly deciding which areas of need the institution is going to respond to by developing and offering courses – becomes very important. It is also more difficult because one is trying to look further into the future than most conventional educational institutions have to.

Third, the various activities involved in the development, production and distribution of materials and the organisation of teaching and support services will need to be scheduled and the schedules published, so that staff know by what date material has to be handed over from development to production, and from production to distribution, and staff and students know, for example, when tutorials and examinations are going to be held.

Fourth, there are certain standards which the student administrative system must achieve. These standards were established years ago by the better correspondence colleges. Basically:

- information provided to the public and to applicants and students must be accurate
- letters and enquiries from the public and from applicants and students must be dealt with quickly, courteously and efficiently
- students' records must be maintained accurately, and updated as quickly as possible, particularly with changes of address and registration
- assignments must be corrected and returned with marks and comments as quickly as possible.

Fifth, it is not only the students who may be at a distance. Many institutions use tutors and markers who also live a long way away from the institution. Their work needs to be planned, administered and supervised. Means of doing this at a distance have to be devised.

Finally, costs must be kept down. It will help if the cost of activities – particularly the cost of developing, producing, distributing and teaching each course – is established and controlled. Administrative 'overhead' costs also need to be kept down as much as possible, subject to the efficient and effective operation of the system. We deal with the question of costs more fully in Chapter 16.

CHAPTER 13

How to start a distance education system

Distance education is not a substitute for all conventional face-to-face education. What it can be and now is, is a complement to it, a necessary part of the overall educational provision of any country. In recent years, after a very long period of being the poor relation, distance education has become a respectable and attractive part of the educational system in many countries. There has been an explosion of new institutions devoted to its provision. Many traditional institutions also teach at a distance. There is every reason to believe that more institutions will teach at a distance in future. Inevitably some distance teaching projects will be started for the wrong reasons and with the wrong aims.

The first requirement is to examine whether there really is a need for a new distance education system. This is more easily said than done. Some of the criteria that will be crucial are:

- what proportion of the target age group are already getting the education that they and the nation require and want?
- if this is too low, should it and can it be increased by expanding conventional institutions?
- is the need mainly for children or for adults? (Distance education works much better for mature students.)
- is the target population large enough to make distance education economically viable?

To these criteria will be added less crucial but very important political motives:

- a desire to meet a need, for example:
  - to achieve a rapid updating in science and technology
  - to achieve rural and community development
  - to make up for a lack of trained teachers
- a desire to meet demand
- a desire to make access to education more egalitarian
- a wish to use an apparently cheap system to expand educational provision
- a desire to indoctrinate the population. (This is a misuse of distance education, but the distinction between propaganda through the media and education through the media is a fine one, and there is no doubt that distance education can be misused.)

These political motives may or may not be based on a firm factual base.

Once the decision to start a system of distance education is taken, what are the essential steps in implementing it? There are, we consider, a number of golden rules:

- in a public system, make sure that there is a powerful minister, preferably of

cabinet rank, who is committed to making the venture a success; in a private system, make sure that there are sufficient commercial backers available to raise the capital necessary to start

- appoint a planning committee of distinguished academics and other relevant experts to design the overall system. The planning committee should:
  - study pre-existing systems and engage consultant advice
  - study how far pre-existing material could meet the need
  - determine the media that can be used
  - determine the size of the necessary budget.
- appoint a leader of the institution who has drive and enthusiasm as well as high academic standing
- do not attempt to run on the cheap. The scepticism of most educators about the system means that anything second-rate will be doomed.

CHAPTER 14

Which organisational model to choose

There are three organisational models for institutions that offer distance education.

'Single mode' institutions are founded for the purpose of offering distance education only.

'Dual mode' institutions provide both conventional face-to-face education and also distance education. Some were founded to do both. Most, however, started as conventional institutions and only later began to teach at a distance as well.

Consortia are groups of autonomous institutions (educational, publishing, broadcasting) which agree to combine to offer distance education.

Argument still rages about the relative merits of these different methods. We are unashamed advocates of the single mode model. Other people are equally strong supporters of dual mode systems.

In dual mode institutions it is argued that the distance learners get exactly the same materials as the conventional learner and that this ensures comparable standards. But, to be true in practice, this requires that very many difficulties are overcome. It is a tribute to the best of these institutions that they have largely overcome them. We think that:

- distance learners actually do better with materials designed specifically for them and these materials, although they follow the same syllabus, are *not* the same as those designed specifically for conventional learners
- teachers often regard the distance learners as less important than the ones they meet every day
- the back-up services that are available in the classroom are not available to the distance learner. To provide alternative back-up is more expensive and is therefore not regarded as justifiable
- there is often a difference in age between the distance learners and the conventional learners. This can call for different treatment rather than the same treatment.

On the other hand it may be easier to convince the public of the credibility of distance education if the institution is dual mode.

Consortia are a splendid idea which all too seldom works in practice. Institutional bureaucracies seldom find it easy to work together. There are also philosophical, educational, technical and financial pressures that make collaboration difficult.

Single mode institutions have a first loyalty to distance education. They are often up against a battery of scepticism which hardens their determination to succeed. The staff develops a professionalism about distance education. On the other hand they are expensive institutions to develop and they can only be shown to be economically competitive when they are large enough to achieve economy of scale. To be this size means a high absolute level of expenditure.

CHAPTER 15

The special problems of managing a distance education system

Those managing distance education systems face a number of problems not found in conventional institutions.

Classroom teachers have a great deal of control over the day-to-day activity of teaching in conventional institutions. Teachers working in a distance education system have to rely on a large number of other people if anything is going to happen at all.

Among the factors which make the management of distance education qualitatively different from that of traditional education are the following:

- The teachers designing the materials have to rely on a large number of production and distribution staff to get the materials ready and into the hands of the students. They may also have to rely on other teachers to provide support to the students and mark the latter's work. They therefore have to explain what they are trying to achieve not only to the students, but also to designers, producers, editors and markers if their conception of the objectives of teaching students is not to be lost. Designers, editors and producers may also have their own objectives. These may be different from the teachers' objectives. This is a communications problem which arises because the job traditionally done by teachers is broken up and the work divided among a range of people.
- It can take many months to design and produce the materials. During this period, the various jobs which have to be done to ensure that all the materials reach the students on time have to be scheduled, and progress monitored. This means keeping track of the work of every single author, producer, designer, editor, warehouse packer, etc. on each item of material (text, audio cassette, kit component, etc.). This is a project control and communications problem.
- If the materials, assessment and back-up services are to get better, the system as a whole and in part has to be evaluated. The fact that most of the learning takes place out of sight and at a distance from the teachers makes evaluation that much more difficult. This is a communications problem. Improving the materials can be both difficult and expensive since it may involve rewriting some of them. This is a cost problem.
- The decision to design a new set of materials precedes their delivery to students by many months. Plans have to be made to ensure that the production, delivery and back-up systems can cope with the volume of materials and students being planned. If they cannot cope, then either they have to be expanded or changed so that they can, or the plans need to be shelved. This is a planning and cost problem.

- Extensive administrative systems are needed todeal efficiently and effectively with large numbers of students living at a distance from the administrative offices. This is a communications and cost problem.

Many of these problems are rooted in the need to ensure that the work of large numbers of different kinds of people is *coordinated*, and that the various people involved in the processes *communicate* with each other.

Success in distance education is as dependent on the quality of the non-teaching staff managing and executing the system as it is on the quality of the academic staff. The way in which managers solve the problems is unimportant provided that they do in fact solve them.

CHAPTER 16

The costs of distance education

Politicians always want to know what a new venture will cost. Because distance education needs few teachers it looks attractively cheap; and indeed, it *can* be very cheap. But it is very easy to make it extremely expensive.

Recurrent costs

There are four different kinds of recurrent expenditure incurred in running a distance education programme.

1. The initiation cost of the teaching material

This may involve one or more of the following:

- the cost of producing a series of television programmes or of the master copies of a series of video cassettes. (The cost of transmitting the television programmes or of making and distributing copies of the video cassettes is *not* part of the initiation cost.)
- the cost of writing teaching texts, including for example, payment to authors, editors and graphic artists and the acquisition of any necessary copyright permissions. (The cost of printing copies is *not* part of the initiation cost.)
- the cost of buying teaching materials that have been produced by other people. It may be possible to purchase the rights to make your own copies of such materials. This purchase price would be an initiation cost. (If you simply buy copies the cost is *not* part of your initiation cost.) This will usually be the cheapest form of initiation.

The total initiation costs in any one year will depend on how much new teaching material is needed. Materials do not last forever and some need renewing frequently. So the costs of rewriting existing materials may soon take so much money that little is left to add more new material.

All initiation costs must be incurred before the materials are offered to students. They are wholly independent of the numbers of students who may study them. It costs just as much for one student as for a million.

2. Costs of presenting materials

This entails, for example:

- monitoring them, i.e. correcting errors, or updating and clarifying parts that students have found ambiguous
- writing new assessment questions and examination papers
- answering general queries about the materials

- transmitting radio or television broadcasts.

These costs are wholly unrelated to the number of students studying the materials.

3. Student related costs

These are the costs that are incurred for every student. They include:

- the unit costs of materials supplied to the student, e.g. the cost of printing one copy of each bit of teaching material, or the cost of each audio or video cassette sent to a student
- the mailing costs
- the cost of paying tutors to mark the work submitted by a student
- the cost of marking a student's examination scripts.

These costs must be added to other costs that are related to the overall numbers of students (and to their geographic distribution) such as:

- the costs of running study centres or residential schools
- the costs of running examinations.

The total student related costs divided by the number of students gives a figure for the *marginal extra cost of one student*. The marginal extra cost of a student makes no allowance for the additional overhead costs which may be incurred if the number of students gets too big for the existing administrative systems to handle.

4. Overhead costs

These are self-evident. It is necessary to have an administration and management centre. Any capital costs not met by grants must be serviced (i.e. the interest paid). Overheads are not related directly to the number of students or volume of materials, but may suddenly increase when the number reaches a certain critical level.

Capital costs

In addition to these annual running costs, there are also the capital costs of any buildings and equipment which need to be bought. These may be considerable, particularly if one uses television and there is a need to build studios and set up a transmission network or satellite to distribute the programmes, or if one uses computer-based communication systems. Some of these capital costs can be avoided by hiring facilities, but this, of course, puts the annual running costs up.

There are some advantages in hiring equipment rather than buying it. This is particularly true if one is not going to make a great deal of use of a particular medium, or if the technology is changing so fast that any equipment one buys is soon likely to be out of date.

If one does buy expensive equipment, then money needs to be set aside for its eventual replacement.

The capital costs of studying at a distance must also be considered. Students may be asked to equip themselves to receive television signals or have a computer. This

can be expensive for the students. Students may also have to pay fees to cover some of the running costs of the institution. It is very important that the costs falling on students are not so great that the people for whom the system is meant cannot afford to enrol in it.

CHAPTER 17

Does distance education work?

Distance education or correspondence education has a long history, going back to the 1840s. There have been, and are, some awful correspondence and distance education systems, providing poor materials, collecting fees, and doing little to help students in difficulty. These problems arose because disreputable businessmen saw correspondence education as a means of making a quick profit. The high drop-out rates and shoddy materials in some systems gave correspondence and distance education in general a bad name. Even though there have been and are many exceedingly good systems, many people were (and remain) sceptical of the value of distance education.

Is this concern well founded? We believe that it is not. There are some poor distance education systems, just as there are some poor traditional systems. There are also systems of both kinds which are extremely good.

The best distance education systems develop and produce extremely good teaching materials. Indeed, many traditional institutions use distance teaching materials in their own teaching. As a way of inducing knowledge and understanding in students, distance education at its best is hard to beat. However, it can be difficult, if not impossible, to acquire some skills at a distance (e.g. surgery). In such cases it is better to teach by traditional means.

Students who study at a distance have greater difficulty than those studying by traditional means (and particularly those studying full time by traditional means) in continuing with their studies. The best distance teaching institutions make sure that they support the students while they are learning. We pointed out the importance of such back-up services in Chapter 10. The existence of such services can do much to reduce drop-out rates.

In some cases, drop-out rates in distance education systems may be comparable with or lower than those found in conventional institutions teaching similar courses in the same country. Generally they are higher, but there is plenty of evidence to show that distance education can teach students effectively.

There is evidence that many students can study successfully at a distance and obtain degrees and diplomas. Some students will nevertheless fail their courses. Any educational institution can reduce its failure rate by lowering its standards. While some distance education institutions may have dubious standards, there are also many traditional institutions with dubious ones. Most distance education institutions have high standards and take great care to safeguard them, because they start off by being suspect. We have no hesitation in saying that the quality of the graduates and diplomates produced by institutions teaching at a distance can be as good as those produced by traditional institutions.

Distance education systems can teach more cheaply than conventional systems,

provided that they have sufficient students to reap the economies of scale. Many manage to do this.

Distance education can do some things better than conventional education. It can use limited resources to reach very large numbers of students (far more than any conventional system could reach). And it is unsurpassed as a way of enabling adults to learn. Evidence shows that the graduates of distance teaching institutions are highly regarded by employers, not least because, by being prepared to study at a distance, they have shown themselves to be highly motivated.

We have no hesitation in saying that the best distance education systems work very well indeed. Moreover, we are not alone in this view. The explosive growth of distance education bears us out. In any educational system it is a useful if not a necessary complement to conventional forms of education.

Finding out more about distance education

We wrote this book because we have both been struck by how many conferences have been held and how many papers and books have been published about distance education in the last few years. We knew that there was nothing very difficult about it and we felt that people might be overawed by the mass of material, much of it written in a new jargon.

We have, however, provided a selected bibliography of what we consider are the best accounts available about some of the features of distance education.

There also exist a number of sources of up-to-date information about the institutions that offer courses of study by distance education. These include

International Centre for Distance Learning
c/o The Open University
Walton Hall
Milton Keynes, MK7 6AA
UK

which has over 500 institutions in 81 countries in its computer record, and

International Extension College
Office D
Dale's Brewery
Gwydir Street
Cambridge, CB1 2LJ
UK

which has a lot of information about distance education, particularly in the third world.

In the UK there is detailed information about courses in distance education available from

MARIS
Bank House
1 St. Mary's Street
Ely
Cambs. CB7 4ER.

There is an international membership organisation that was set up to allow for communication between all those engaged in distance education. It is the International Council for Distance Education (ICDE) and has its offices currently at

External Studies
University of New England
Armidale, NSW
Australia 2351.

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A Short Guide to Distance Education

In distance education, the learner and the teacher are not face-to-face. In order for two-way communication to take place between them, a medium such as print, radio or the telephone has to be used.

There is widespread ignorance about what distance education really is, and a number of recent books are couched in a new jargon which makes it appear very complex. The authors of this guide have set out to write a short, clear book which shows that, in essence, it is rather easy to define (though not necessarily easy to achieve).

This book will be useful both for those encountering distance or open learning for the first time and for people who are already practitioners. In eighteen refreshingly short chapters it covers every aspect of the subject clearly and methodically.

The Authors

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